UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 13 2015

CERTIFIED MAIL 7010 1060 0002 1703 9188
RETURN RECEIPT REQUESTED

The Honorable Johnny Magee
Mayor, City of Laurel
401 North 5th Avenue
Laurel, Mississippi 39440

Re: U.S. Environmental Protection Agency and Mississippi Department of Environmental Quality Compliance Evaluation Inspection and Reconnaissance Inspection
Notice of Violation and Opportunity to Show Cause
National Pollutant Discharge Elimination System Permit (NPDES) Nos.:
MS0024163 and MS0020176
Laurel Publically Owned Treatment Works Number 1 and Laurel Publically Owned Treatment Works Number 2 (POTW) Wastewater Treatment Plants

Dear Mayor Magee:

The purpose of this letter is to advise the City of Laurel (the City) that the United States Environmental Protection Agency Region 4 has reviewed the results of a Compliance Evaluation Inspection/ Reconnaissance Inspection that was conducted on December 16, 2014, by the EPA and the Mississippi Department of Environmental Quality on the City's Wastewater Collection and Transmission System (WCTS) and its associated Wastewater Treatment Plants (WWTPs), the Laurel POTW Number 1 (locally referred to as the Massey WWTP) and the Laurel POTW Number 2 (locally referred to as the Smyly WWTP). The inspection results are summarized in the enclosed inspection report.

Based upon review of the inspection results, the EPA has determined that the City has violated the Clean Water Act (CWA) as follows:

During the period of September 2009, through August 2014, the City reported 35 Sanitary Sewer Overflows (SSOs) totaling over 1.5 million gallons of untreated sewage that discharged from the City's WCTS to navigable waters of the United States as defined by Section 502 of the CWA, 33 U.S.C. § 1362. Such SSOs were not authorized by the NPDES permits and are therefore violations of Section 301(a) of the CWA, 33 U.S.C. § 1311(a). In addition, the City had 49 SSOs totaling over 549,000 gallons of untreated sewage that was released from the WCTS and that did not reach navigable waters of the United States. All 84 SSOs are indicative of the City's violation of Permit Condition T-28 (Proper Operation, Maintenance and Replacement) and Permit Condition T-29 (Duty to Mitigate) of NPDES Permit Nos.: MS0024163 and MS0020176, which requires the City to properly operate and maintain its facilities and to "minimize or prevent discharges" from the system. The City has also failed to perform basic maintenance requirements for the WWTPs, in violation of Permit Condition T-28 (Proper Operation,

Maintenance and Replacement). Specifically, the Massey WWTP clarifier weirs have damaged or broken weir plates impeding the proper operation of the clarifiers and both the Massey and Smyly WWTPs had excessive build-up of moss or algal growth in the clarifiers which also impedes the proper operation of the clarifiers.

Until compliance with the CWA is achieved, the City is considered to be in violation of the CWA and subject to enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319. This Section provides for the issuance of administrative penalty and/or compliance orders and the initiation of civil and/or criminal actions.

Therefore, the EPA requests that representatives of the City contact the EPA within seven business days of receipt of this letter to arrange a meeting in this office to show cause why the EPA should not take formal civil enforcement action against the City for these violations and any other potential violations, including the assessment of appropriate civil penalties. In lieu of appearing in person, a telephone conference may be scheduled. The City should be prepared to provide all relevant information with supporting documentation pertaining to the violations, including but not limited to any financial information which may reflect an inability to pay a penalty. The City has the right to be represented by legal counsel.

Please be aware that the EPA may use information provided during the meeting or telephone conference in any enforcement proceeding related to this matter. Failure to schedule a show cause meeting may result in a unilateral enforcement action against the City. Notwithstanding the scheduling of a show cause meeting, the EPA retains the right to bring further enforcement action under Section 309 of the CWA, 33 U.S.C. § 1319, for the violations cited therein or for any other violation of the CWA.

Please contact Mr. Dennis Sayre, of my staff, at (404) 562-9756 or by email at sayre.dennis@epa.gov to arrange a show cause meeting. Legal inquiries should be directed to Mr. William Bush, Associate Regional Counsel, at (404) 562-9538.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosure

cc: Mr. Randall Diaz
United Water, Inc.

Mr. Lorenzo Anderson
City of Laurel

Mr. Chris Sanders
Mississippi Department of Environmental Quality

Mr. Les Herrington
Mississippi Department of Environmental Quality

ENCLOSURE A

Compliance Evaluation Inspection Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4
Water Protection Division
NPDES Permitting and Enforcement Branch

WASTEWATER COLLECTION AND TRANSMISSION SYSTEM COMPLIANCE EVALUATION INSPECTION AND WASTEWATER TREATMENT PLANT RECONNAISSANCE INSPECTION REPORT

Water Department
City of Laurel
Jones County
Mississippi
NPDES Permit Nos. MS0024163 and MS0020176

Address:
902 West 6th Street
Laurel, Mississippi 39440

Inspection Date:
December 16, 2014

Inspectors:
Dennis Sayre, EPA Region 4
Sara Janovitz, EPA Region 4
Megan Rupp, MDEQ

Inspection Report Prepared by:
Dennis Sayre

January 20, 2015

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ABBREVIATIONS AND ACRONYMS

CEI	Compliance Evaluation Inspection
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	United States Environmental Protection Agency
GIS	Geographic Information System
GPM	Gallons per Minute
I/I	Infiltration/Inflow
ICIS	Integrated Compliance Information System
LS	Lift Station
MDEQ	Mississippi Department of Environmental Quality
NPDES	National Pollutant Discharge Elimination System
MGD	Million Gallons per Day
MOM	Management, Operation, and Maintenance
RDII	Rain Derived Infiltration and Inflow
SORP	Sewer Overflow Response Plan
SSO	Sanitary Sewer Overflow
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

I. OVERVIEW

The City of Laurel (the City) owns two Wastewater Treatment Plants (WWTPs) and the associated Wastewater Collection and Transmission Systems (WCTSs) which consist of approximately 136 miles of sanitary sewer gravity pipes, 47 pump stations and associated appurtenances. United Water, Incorporated is contracted to maintain and operate the City's WWTPs and their associated WTCSs. The City serves approximately 19,760 residential customers and various business and industrial entities within the city limits.

The U.S. Environmental Protection Agency sent an Information Request Letter pursuant to Section 308 of the Clean Water Act (CWA) (308 Letter) to the City requesting information related to Sanitary Sewer Overflows (SSO) from the City's sewer system. The EPA received the City's response, prepared by United Water, dated September 26, 2014, to EPA's 308 Letter on September 30, 2014.

The EPA and the Mississippi Department of Environmental Quality (MDEQ) conducted a Compliance Evaluation Inspection (CEI) of the City's WCTS on December 16, 2014. The purpose of this CEI was to evaluate compliance with the CWA and the National Pollutant Discharge Elimination System (NPDES) permits as it relates to SSOs from the sewer system and to assess the City's Management, Operations and Maintenance (MOM) type programs.

The EPA discussed MOM programs United Water management, including inspection and maintenance records, sewer assessments, preventive maintenance and more. The EPA and MDEQ also interviewed management personnel and visited various sites in the WCTS including: the manholes located on North 5th Avenue, North 2nd Avenue and Herbert Avenue; Lift Station (LS) 22, located at Wayne Farms, LLC poultry processing plant; LS 34 ("Howard Ballast LS"), located at 580 Eastview Drive; the LS located at the 3600 block of Industrial Boulevard. The EPA also performed a reconnaissance inspection of the City's two WWTPs to assess the general condition of the facilities. This report describes the EPA's findings, and provides an initial analysis of SSOs from the sewer system. In this report, the EPA also identifies areas that need to be addressed and presents some preliminary recommendations.

Any property relating to the operation and maintenance of the Publically Owned Treatment Works (POTW), whether real or intellectual property, is assumed to be the property of the City for the purposes of this report. "United Water" will be referenced as appropriate.

II. OBJECTIVES

The specific objectives of the inspection were to assess the City's compliance with the CWA, evaluate reported SSOs, assess the MOM programs, where implemented, and to examine the causes of SSOs in the City's sewer system.

III. INVESTIGATION METHODS

The investigation included:

- Review the City's S308 Letter response;
- Review of the Integrated Compliance Information System - National Pollutant Discharge Elimination System (ICIS-NPDES) federal database, state documents and the NPDES Permit;
- Interviews with the United Water and City personnel; and,
- Visual inspection.

IV. REGULATORY SUMMARY

The MDEQ is authorized under the CWA to implement the NPDES program in Mississippi. The George Gaddy Treatment Facility #1 (permitted under the name Laurel POTW, No. 1), located at 1300 Creek Road Avenue, is authorized under MDEQ's NPDES Permit No. MS0024163 to discharge treated sewage into Tallahala Creek. The George Gaddy Treatment Facility #2 (permitted under the name Laurel POTW, No. 2), located at 341 Flora Avenue, is authorized under the NPDES Permit No. MS0020176 to discharge treated sewage into Tallahala Creek. POTW No. 1 and POTW No. 2 are both major dischargers with permitted capacities of 7.4 million gallons per day (MGD) and 6.6 MGD respectively.

The Tallahala Creek is a major tributary of the Leaf River in the Pascagoula River Basin. Tallahala Creek was listed as impaired for Organic Enrichment/Low Dissolved Oxygen in 1996 and again in 1998. MDEQ developed a Total Maximum Daily Load (TMDL), effective September 22, 1999, for POTW No. 1 and No. 2 (as well as one additional privately owned treatment works) to address the impairment. No other impairment was noted for this waterbody in or immediately downstream of Laurel.

SSOs are prohibited discharges based on Sections 301 and 402 of the CWA which generally prohibit the discharge of pollutants by any person unless authorized by an NPDES permit. Condition No. T-28 (Proper Operation, Maintenance and Replacement) of POTW No. 1 and No. 2 NPDES Permits requires the City to properly operate and maintain all components of the system to achieve compliance with the conditions of the permit. Condition No.T-29 (Duty to Mitigate) also requires the City to "take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment."

Discharges to waters of the United States from sanitary sewer systems are prohibited unless authorized by an NPDES permit. In addition, overflows from the sewer system that do not reach waters of the United States can be indicative of a failure to comply with the proper operation and maintenance provisions of City's permits.

V. INSPECTION SUMMARY AND FINDINGS

The EPA performed a pre-inspection evaluation and an on-site inspection of the WCTS. The pre-inspection evaluation of the City's WCTS consisted of examining historic records submitted by United Water, on behalf of the City. This section will provide a summary of both means of inspection.

A. Management Interview

The EPA and MDEQ met with the United Water personnel and City representatives which included the Director of Public Works and Mayor Johnny Magee, at 8:00 a.m., December 16, 2014, at the United Water's office in Laurel. Topics of discussion during the meeting included the use and documentation of any MOM programs, including Mapping, Sewer Overflow Response Plan (SORP), Preventive Maintenance Programs, Operations Programs, Continuous Sewer System Assessment Program (CSSAP), Capacity Assurance Program, and Fats, Oil, and Grease (FOG) Control.

The EPA discussed concerns relating to SSOs in detail with United Water's Area Manager, Mr. Randall Dias, and inquired about each program listed above to determine whether a formal or non-formal (not in writing) program existed to manage various maintenance and operations needs of the WCTS. MOM programs are discussed in more detail in Section V.E (Management, Operation and Maintenance Programs) below. Section V.B (SSO Observations) provides detailed discussions relating to SSOs.

B. SSO Observations

As requested pursuant to the 308 Letter, the City submitted to the EPA information related to SSOs that occurred from September 2009 through August 2014. The EPA analyzed the information and compiled results based on total number of overflows, total and average volume of overflows per year per 100 miles of pipe and the average volume per SSO. The EPA also categorized the SSOs by cause which included causation categories as listed in Table 1 below. Grease and roots blockage categories are frequently related causes in that grease accumulation around roots often cause blockages. It appears that grease and root blockages caused only 14% of the SSOs that occur in the City whereas 46% of the SSOs are caused by Rain Derived Infiltration and Inflow (RDII). SSOs caused by mechanical or electrical failures at a pump station amounted to 18% of the reported SSOs and 8% were associated directly with failed force mains (refer to Table 1 and Figure 1 below). Of the 84 SSOs reported to the EPA, 35 were reported to have discharged into waters of the U.S.

Cause Summary	No. of SSOs
Blockage	14
Contractor Damage	6
FM Failure	7
Pipe Failure	6
Lift Station Failure	18
RDII	33
Total	84

Table 1. SSO Cause Count.

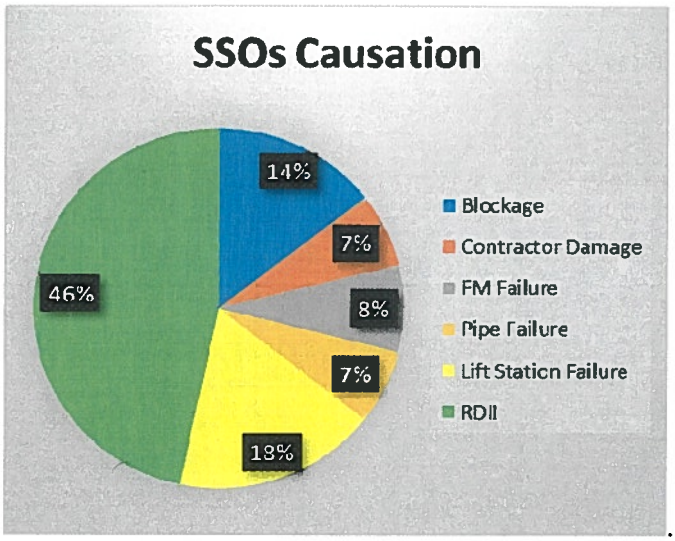

Figure 1. SSO Causation Chart.

All SSOs reported to the EPA were plotted on a map as shown in Figure 2 below. The EPA discussed four specific SSO locations circled in Figure 2. SSOs reported at N 5th Avenue, N 2nd Avenue, and Herbert Avenue, appeared to be chronic SSO locations due to lack of system capacity from excessive flow caused by RDII during wet weather events. One area of concern on Industrial Boulevard experienced an excessive number of force main pipe failures. These locations were discussed in detail with United Water management. Table 2 summarizes RDII related SSOs reported by the City.

RDII SSO locations	SSO Count
N 5th Ave	12
Herbert Ave	9
N 2nd Ave	3
Johnson Circle	5
E 5th Street	1
Flynt Rd	1
Maple Street	1

Table 2. RDII caused SSO locations.

United Water personnel and contractors investigated the cause of SSOs on N 2nd and N 5th Avenues in early 2014 and discovered that large volumes of stormwater was being discharged into the sanitary sewer system from illicit discharge points located on the property of the Wayne Farms chicken processing plant, causing SSOs upstream of the Wayne Farms LS. United Water stated that the illicit discharges of stormwater have since been disconnected from the WCTS and further stated that the City plans to increase the lift station capacity for the Wayne Farms LS, which is supported by a Community Development Block Grant. The SSOs reported at the Wayne Farms plant are listed in Table 2, as E 5th Street. Disconnecting the illicit stormwater discharges appears to have positively affected the flow capacity of the WCTS at N 2nd/N 5th Avenue, E 5th Street and at Herbert Avenue.

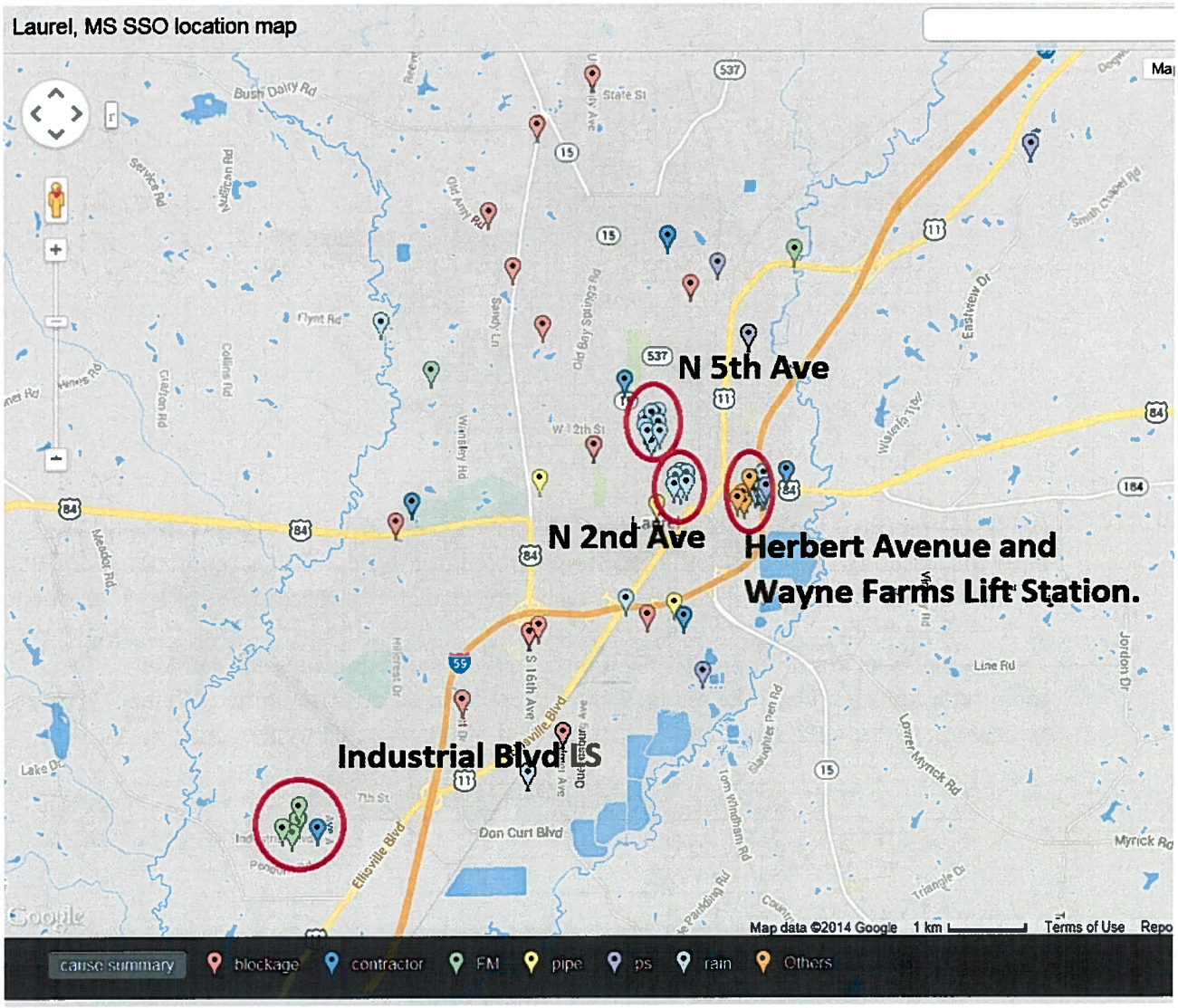

Figure 2. SSO map for SSOs occurring between September 2009 and August 2014. (The pin locations are an approximation of SSO locations).

The gravity pipes and manholes on Herbert Avenue are located in close proximity to the WWTP, as is the Wayne Farms LS. The Wayne Farms LS gravity pipe transmits industrial waste to the Anaerobic Pond at POTW No. 2 (Smyly WWTP). The gravity pipes on Herbert Avenue and the N 2nd/N 5th Avenue SSO locations are connected at E 5th Street and transmitted directly to the WWTP receiving pond by gravity (according to the sewer pipe drawings provided), which in turn is presumably pumped to the head works and receiving secondary treatment at the oxidation ditch. It is unclear how the Wayne Farm and E 5th St gravity pipe segments are connected at the manhole marked in Figure 3, but United Water stated that the Wayne Farms collection system is connected at this manhole to prevent sewage overflows from the lift station wet well to protect the food processing operation. These SSO locations are discussed further in the Site Inspection section below.

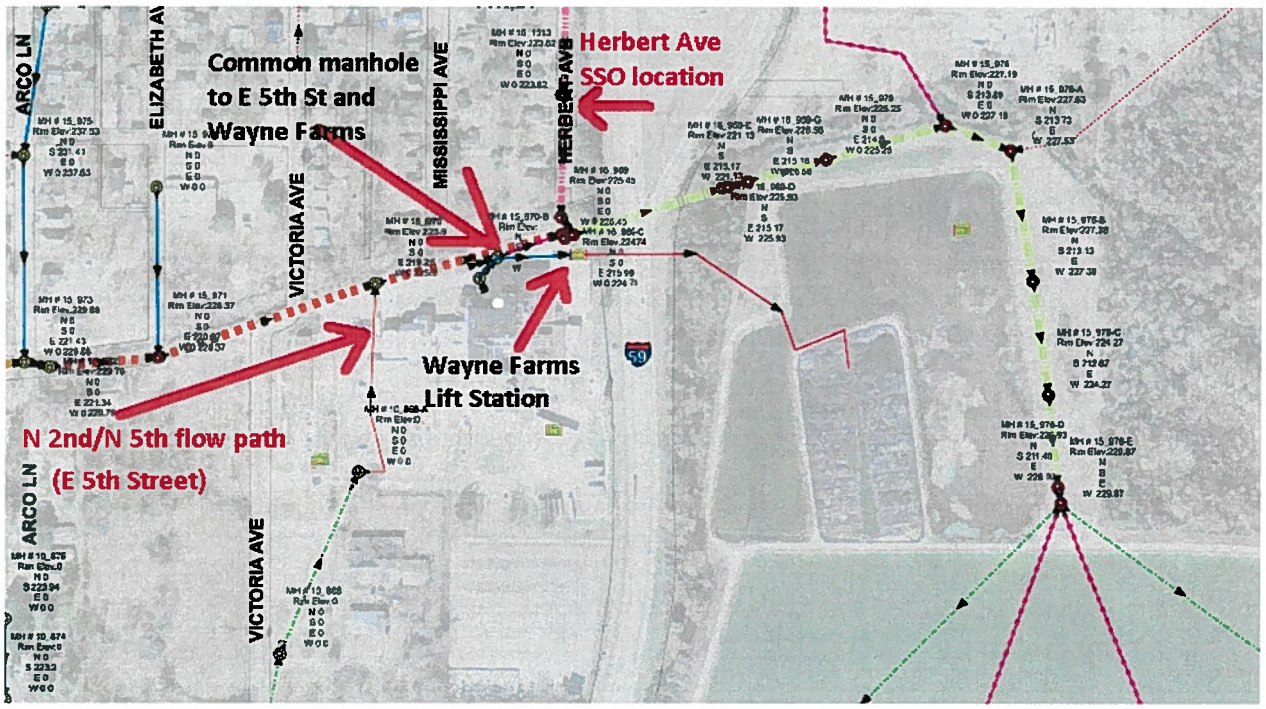

Figure 3. Sewer map at Wayne Farms LS and Herbert Avenue.

SSOs reported on Johnson Circle were not specifically discussed during this interview. These SSOs occurred between December 2009 and March 2011. The City's 308 Letter response indicated that these SSOs were addressed through sewer rehabilitation. No SSOs were noted since March 2011 at the Johnson Circle location.

United Water management reiterated that the City has invested major funds into rehabilitation and system upgrades since 2009. Additional rehabilitation plans are underway for the City's WCTS. The 308 Letter response also included a summary of rehabilitation activity and funding plans, as shown below.

Capital Sewer Projects - Laurel, MS

2009 SRF Sewer Improvements – Contract 1
-Replaced 12,788 LF of sewer main and 55 manholes
-Rehabilitated 5,451 LF of sewer main and 267 VLF of manholes
Began Design – April 2009
Began Construction – September 2010
Completed Construction – December 2011
Total Project Cost: $2,625,652

2009 SRF Sewer Improvements – Contract 2
-Replaced 903 LF of sewer main
-Rehabilitated 14,128 LF of sewer main and 500 VLF of manholes
Began Design – April 2009
Began Construction – September 2010
Completed Construction – June 2011
Total Project Cost: $1,424,340

Brown Street Sewer Improvements
-Installed 2,300 LF of new sewer main to allow for an additional capacity overflow from an existing main to prevent SSOs.
Began Design – November 2010
Began Construction – April 2011
Completed Construction – December 2011
Total Project Cost: $428,869

Inflow and Infiltration Study
-Conducted comprehensive I&I study to assess sewer collection system and identify projects to reduce major sources of I&I.
-Included 8 rain gauges, 33 flow meters, 226,000 LF of smoke testing, and 76,153 LF of cleaning and CCTV Inspection.
Began Study – November 2011
Completed Study – April 2013
Total Project Cost: $432,620

Generator Upgrades
-Installed 2 new generators at both WWTP facilities to allow complete continuous operation of WWTP in the event of power failure.
Began Design – November 2011
Began Construction –March 2013
Completed Construction – November 2013
Total Project Cost: $630,836

WWTP Headworks Upgrades
-Installed new bar screens, new influent pumps and upgraded controls at both WWTP facilities to help eliminate system surcharges and better handle high flow events.
Began Design – April 2012
Began Construction – June 2013
Expected Completion Date – October 2014

Total Project Cost: $2,862,649

2013 SRF Sewer Improvements
-Project is funded, designed, and awarded to the low bidder. Construction NTP has been issued as of September 8, 2014.
-Plan quantities include 21,050 LF main rehabilitation, 15,200 LF main replacement, 750 VLF manhole rehabilitation, and 63 manholes replaced
Began Design – June 2013
Expected Construction Start Date –October 2014
Expected Completion Date – October 2015
Total Project Cost: $5,529,200

2013 Pump Station Improvements
This Project covered 15 Pump Stations and included:
Control Panel Upgrades/replacement
Pump repairs/replacement
Installation of SCADA for remote monitoring
Wet well repairs
Total Project Costs: $493,000.00

2013 Equipment Purchases for Maintenance of the SSS
Vacon/Jet Truck for Cleaning of the SSS and Pump Station Wet Wells
TV/Camera Truck for assessing the SSS and recommending: repair, replacement, etc..
Backhoe for making repairs
Dump Truck
Smoke testing equipment: Fans, blowers, smoke sticks
Total Equipment Costs: $764,741.00

2014 Pump Station Improvements
This Project covered 15 Pump Stations and included:
Control Panel Upgrades/replacement
Pump repairs/replacement
Installation of SCADA for remote monitoring
Wet well repairs
Total Project Costs: $500,000.00

2016 SRF Sewer Improvements
-Facilities plan submitted and approved by MDEQ.
-Preliminary quantities include 21,600 LF main replacement, 7,730 LF main rehabilitation, 74 manholes replaced, and 230 VLF of manhole rehabilitation.
Expected Design Start Date– Spring 2016
Expected Construction Start Date – Summer 2017
Expected Completion Date – Summer 2018
Total Project Cost: $3,175,930

Findings:

Data submitted to the EPA indicates that the City is experiencing SSOs at a rate of 12.4 SSOs per 100 miles of pipe per year for the period evaluated. Refer to Table 3 for the annual breakdown and analysis of SSOs.

Date	SSOs
09/2009 - 08/2010	9
09/2010 - 08/2011	7
09/2011 - 08/2012	11
09/2012 - 08/2013	24
09/2013 - 08/2014	33
total	84
annual average	16.8
SSO/100 MOP/year	12.4

Table 3. SSO analysis.

As indicated above, the majority of the reported SSOs is due to a lack of capacity to transmit excessive flow caused by RDII. The EPA examined rain events during the period from August 2009 to September 2014 to approximate the size of rain storm that would cause enough RDII in the system to hydraulically overload the gravity pipes, resulting is SSOs. Table 4 below references the rain data summary for those days that the City reported SSOs. National Oceanic and Atmospheric Administration (NOAA) rain data can be found in Enclosure 1.

Data collected from NOAA is raw data from USGS weather station 224939 located on Tallahala Creek at Hwy 15 (east-central part of the City) and from a Private Weather Station number KMSLAURE2, located in the Pine Belt area in the northern part of the City. Rain data was collected from two rain stations to increase accuracy of observed rain events throughout the City. The data collected from NOAA indicating 0" inches in Table 4, when rain likely occurred on that date, may be due to unavailable data for that specific day. RDII derived SSOs in sanitary sewer systems typically behave such that a rain event on any given day will likely cause an SSO to occur at the same location given the same or similar rain event, all things being equal. An examination of Table 4 indicates that the probability of an SSO occurring on Herbert Avenue is high for any rain event equal to or greater than 0.79 inches and could have occurred with rain events of smaller duration and intensity, as indicated in Table 4. Since some rehabilitation work was performed in sewersheds serving these SSO locations since early 2014 for North 5th Avenue, North 2nd Avenue, and Herbert Avenue and since 2011 for Johnson Circle, the same analogy may not hold true after completion of work; however, an analysis of the NOAA data indicates a high probability that SSOs occurred in much higher numbers than what was reported by the City.

Date (epa)	location summary (EPA)	Volume (EPA entry)	Cause Summary (EPA)	NOAA Rain Gauge Data(USGS station at Tallahala Crk) (daily-inches)	NOAA Rain Gauge Data (daily-inches)	Public Weather Station KMSLAURE2 (Pine Belt area north part of Laurel)
2/1/11	Flynt Rd	3,500	rain	0"	2.02" on 2/2	1.83"
2/11/13	Herbert Ave	2,400	rain	3.3"	2.6" on 2/12, 0.17" on 2/13	0"
3/11/13	Herbert Ave	400	rain	0.79"	.82" on 3/12	0.43"
4/11/13	Herbert Ave	900	rain	0.07"	1.63" on 4/12	0.38"
9/24/13	Herbert Ave	400	rain	0"	0" on 9/23, 2.63" on 9/22	1.08"
3/16/14	Herbert Ave	10	rain	2.02"	0" on 3/15	1.26"
4/4/14	Herbert Ave	525	rain	0"	1.95" on 4/5/14, 1.45 " on 4/6/14, 1.15" on 4/7	0.51"
4/14/14	Herbert Ave	500	rain	0"	3.32" on 4/15	1.96"
4/14/14	Herbert Ave	300	rain	0"	3.32" on 4/15	1.96"
4/28/14	Herbert Ave	700	rain	0"	4.02" on 4/29	2.54"
12/14/09	Johnson Circle	350,000	rain	0.03"	2.6" on 12/13, 0.34 on 12/12	1.8"
12/30/09	Johnson Circle	60,000	rain	0"	0.86" on 12/31	0.99"
2/4/10	Johnson Circle	25,000	rain	0.4"	3.1" on 2/5	4.24"
2/1/11	Johnson Circle	5,500	rain	0"	2.02" on 2/2	1.83"
3/9/11	Johnson Circle	25,540	rain	3.5"	0.15" on 3/8	1.71" (1.3" on 3/8)
7/19/12	Maple Street		rain	0.27	2.0" on 7/19	0"
4/4/14	N 2nd	525	rain	0"	1.95" on 4/5/14, 1.45 " on 4/6/14, 1.15" on 4/7	0.51"
4/14/14	N 2nd	500	rain	0"	3.32" on 4/15	1.96"
4/28/14	N 2nd	700	rain	0"	4.02" on 4/29	2.54"
12/8/13	N 5th Ave	500	rain	0.04"	0.73" on 12/7, 2.83" on 12/9	0.2"
3/28/14	N 5th Ave	1,750	rain	2.01"	0.8" on 3/29	2.34"
4/4/14	N 5th Ave	625	rain	0"	1.95" on 4/5, 1.45 " on 4/6, 1.15" on 4/7	0.51"
4/4/14	N 5th Ave	525	rain	0"	1.95" on 4/5, 1.45 " on 4/6, 1.15" on 4/7	0.51"
4/4/14	N 5th Ave	525	rain	0"	1.95" on 4/5, 1.45 " on 4/6, 1.15" on 4/7	0.51"
4/14/14	N 5th Ave	525	rain	0"	3.32" on 4/15	1.96"
4/14/14	N 5th Ave	500	rain	0"	3.32" on 4/15	1.96"
4/14/14	N 5th Ave	500	rain	0"	3.32" on 4/15	1.96"
4/14/14	N 5th Ave	500	rain	0"	3.32" on 4/15	1.96"
4/28/14	N 5th Ave	700	rain	0"	4.02" on 4/29	2.54"
4/28/14	N 5th Ave	700	rain	0"	4.02" on 4/29	2.54"
4/28/14	N 5th Ave	700	rain	0"	4.02" on 4/29	2.54"
4/14/14	Wayne Dr	300	rain	0"	3.32" on 4/15	1.96"

Table 4. Rain Data for RDII caused SSOs between December 2009 and April 2014. Data indicating 0" of rain may be due to a lack of available data and does not necessarily indicate that zero rain occurred.

A comparison of the data in Table 4 and the NOAA data indicates that SSOs likely occurred in at least one of these four locations: North 5th Avenue, North 2nd Avenue, Herbert Avenue and Johnson Circle. Table 5 shows the "Total Rain Days" for rain events as indicated in the "24 hour rain event >=" column. This table shows rain events that totaled 0.79 inches (or greater) of rain in a 24 hour period occurred for 131 days over a 5 year period. Comparing Table 4 and Table 5 concludes that at least one RDII derived SSO would have likely occurred on North 5th/2nd Avenue, Johnson Circle and/or Herbert Avenue over a total period of 131 days between October 2009 and September 2014. The City reported a total of 32 RDII derived SSOs that occurred over a period of 16 days between October 2009 and September 2014 indicating that the City has grossly under reported SSO events in the past.

24 hour rain event >=	0.79"	1.5"	2.54"
10/2009 - 9/2010	22	9	3
10/2010 - 9/2011	22	8	2
10/2011 - 9/2012	26	14	5
10/2012 - 9/2013	37	13	5
10/2013 - 9/2014	24	10	3
Totals Rain Days	131	54	18

Table 5. Rain days greater than or equal to 0.79", 1.5", and 2.54" of rain in a 24 hour period.

The EPA also examined SSO reports that were submitted to MDEQ by the City from August 2009 to December 2014. The reports to MDEQ appeared to match the SSOs reported by the City to the EPA and the SSO observed during inspection at the Howard Ballast LS was documented on MDEQs records. However, the SSO that occurred on Herbert Avenue, as noted in the site inspection below, was not recorded in MDEQs records. Enclosure 2 is a copy of MDEQ's SSO records from August 2014 to December 2014.

C. Site Inspection

The following are observations noted during the visual on-site inspection.

North 5th Avenue: The EPA and MDEQ visited several manholes on North 5th Avenue, many of which were bolted down. One manhole was opened and inspected (Figure 4 below). There was no clear evidence that any recent SSOs have occurred at these locations. Of note, the City was performing sewer rehabilitation on the gravity pipes about one city block away (Figure 5).

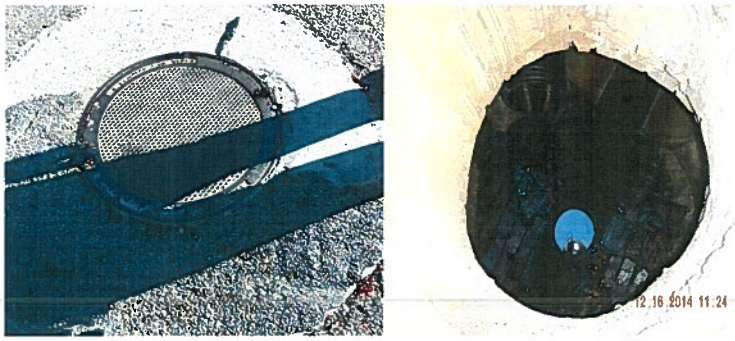

Figure 4. Manholes located approximately 30 yards apart on N. 5th Avenue.

Figure 5. Sewer rehabilitation work in progress during inspection.

North 2nd Avenue: The EPA and MDEQ visited manholes on the corner of N 2nd Avenue and 7th Street. The manhole ladder rungs were coated with sewage debris up to the manhole crown indicating that this location has surcharged regularly in the past (Figure 6). However, there was no clear evidence that this site experienced any recent SSOs.

Figure 6. North 2nd Avenue manhole invert.

Herbert Avenue: The EPA and MDEQ visited two manholes, located in close proximity, on Herbert Avenue. Figure 7 shows fresh sewage debris on the interior and exterior crown of the manhole, indicating that an SSO had occurred as recently as the night before the inspection.

Figure 7. Herbert Avenue manholes. Red circles annotates sewage debris that was observed at the interior and exterior crown of the manhole.

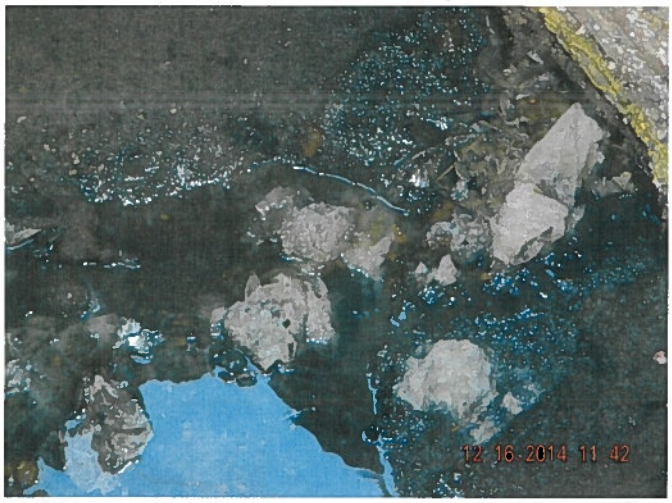

Figure 8. Herbert Avenue manhole invert.

The manholes on Herbert Avenue appeared to have deteriorated pipe capacity in at least one of the manholes and has an accumulation of sewage debris on all ladder rungs (Figure 8). Both of these manholes are about 5 feet in depth. The evidence collected at this site indicates that surcharging and SSOs continue to be a common occurrence from these shallow manholes. Figure 9 shows that SSOs reported to hit water by the City from this location directly impacts waters of the U.S.

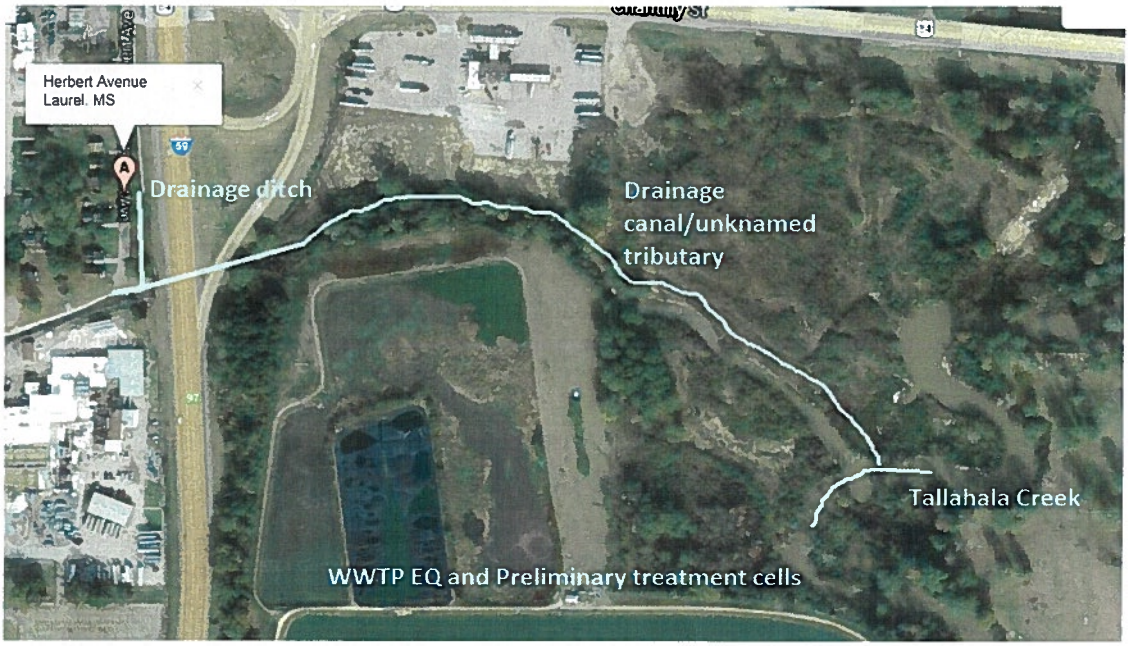

Figure 9. Blue line shows path of SSO discharge to Tallahala Creek.

Wayne Farms Lift Station: The Wayne Farms LS is located on the Wayne Farms, Inc. poultry processing facility. This lift station is scheduled for a wet well and pump upgrade to facilitate an increase in capacity. No evidence of SSOs were noted at this location. The facility handles a large amount of solids and biological oxygen demand constituents. The lift station appears to be operating properly.

Howard Ballast Lift Station: The Howard Ballast LS is located on the property of Howard Lighting Products, a division of Howard Industries, Inc. This lift station transmits industrial and domestic waste from this facility. United Water personnel disclosed that an SSO was occurring at this location at the time of inspection. An investigation after the incident showed that the pump impeller was clogged with rags which facilitated the incident. United Water personnel were on-site responding to the SSO well before the EPA's arrival. The facility was also instructed to cease its waste flow while the LS was off-line to correct the problem. United Water's response to the SSO appeared to be adequate to minimize the environmental impact and to correct the malfunction. Figure 10 shows the wet well and the exterior valve box for this lift station.

Figure 10. Howard Ballast LS wet well and valve box.

Industrial Boulevard Lift Station: This lift station was in good working order and appears to be operating properly. SSOs attributed to PVC force main failure was reported by the City from this location. Rehabilitation work has been performed on the lift station and the associated force main.

D. Management, Maintenance and Operations (MOM) Programs

As part of the initial inspection interview, the EPA made inquiries into what programs and procedures the City is utilizing to properly manage, operate and maintain the WCTS. This section will describe the EPA's findings as it relates to MOM type programs as well as a brief description of the types of programs that are typical of a well-run utility. MOM Program development guidance documents can be found on EPA, Region 4's website at http://www.epa.gov/region4/water/wpeb/momproject/.

1. Information Management System

The information management system enables utility management to adequately evaluate operation, maintenance, customer service (complaint response), and system rehabilitation activities so that overall system performance can be determined and utility planning can be conducted.

The City is currently utilizing management software ("eRportal") that was partially implemented at the time of the inspection. eRPortal is an automated asset management tool that includes work order and customer complaint tracking and, according to the product website, "applications that enable companies to optimize operations, maintain assets and infrastructure, and manage all related materials, resources, and logistics." The EPA did not assess the functionality of this software tool, but United Water expects that full implementation will occur during the first quarter of 2015.

2. Mapping Program

Formal Mapping Program documentation should be developed to ensure consistency of map protocol and to provide official guidance for map review and maintenance.

The City has its WCTS mapped in a GIS-based map that displays sewer pipe and manhole locations. The City also uses advanced software that allows United Water personnel to utilize hand held devices to view the sewer map.

3. Grease Control Program

The EPA recommends that the City develop documents that outline procedures and provide guidance on how to manage and reduce FOG build-up in the WCTS. A valid FOG program includes providing guidance documents for permitting, inspection, enforcement, compliance tracking, budgeting, establishing inspection priorities, public education guidance and performance goals and provide specific grease control obligations for food service establishments in accordance with City ordinances. Formal FOG program development should include a review of the City's ordinances to ensure that the appropriate personnel have the ability to adequately enforce FOG related ordinances.

The City enforces sewer ordinances through the City's Inspections Department. United Water states that the Inspections Department works closely with the Water Department and has been proactive in enforcing grease trap violations. A sufficient FOG Program document for the Water Department could outline the relationship between the departments, contact information, procedures used by United Water personnel to request the Inspections Department to investigate possible ordinance violations due to excessive grease build-up in gravity pipe segments and wet wells, and reporting and follow-up procedures.

4. Capacity Assurance Program

A formal Capacity Assurance Program includes specific criteria for approval of additions to the WCTS and/or WWTPs, balancing Permit requirements and the City's codes and ordinances; performance measures used to approve or deny an extension of the collection system; and procedures used to calculate capacity in the collection system and at the treatment plant.

5. Preventive Maintenance and Inspection Programs

A **Gravity Line Preventive Maintenance Program**. The Gravity Line Preventive Maintenance Program should include the following components: 1) blockage abatement mechanisms (including both hydraulic and mechanical cleaning); 2) root control mechanisms; 3) debris control mechanisms, and 4) manhole preventive maintenance procedures. This program should include the following activities: 1) identification of, and provision for, all personnel and equipment needed; 2) determination of the frequency; 3) establishment of procedures; 4) establishment of priorities for scheduling; 5) the use of standard forms; 6) establishment of record keeping requirements; 7) establishment of performance measures; and 8) integration of all data collected under the program with other information management systems.

The City currently cleans and inspects gravity lines on an as-needed basis.

A **Continuing Sewer System Assessment Program (CSSAP)**. The CSSAP should establish procedures for setting priorities and schedules for undertaking the WCTS assessment including: 1) corrosion defect identification; 2) routine manhole inspections; 3) flow monitoring; 4) CCTV activities; 5) gravity system defect analysis; 6) smoke testing, and; 7) pump station performance and adequacy analysis. The CSSAP should provide for the assessment of at least ten percent (10%) of the WCTS on average per year, resulting in the assessment of the entire WCTS at least once every ten years, and establish priorities and schedules taking into consideration the nature and extent of customer complaints; flow monitoring; location and cause of SSOs and WCTS deficiencies; any remediation work already ongoing; pump station run times; field crew work orders; any preliminary sewer assessments, such as flow monitoring results; community input; and any other relevant information.

A **Infrastructure Rehabilitation Program (IRP)**. The IRP should establish procedures for setting priorities and schedules for undertaking rehabilitation of the WCTS. The IRP should address Infiltration/Inflow (I/I), structural issues in the WCTS, and the other conditions causing SSOs, with the goal of eliminating future SSOs. The IRP should take into account all previous information the City has gathered including any information gathered pursuant to the CSSAP. The IRP should also establish standard procedures to analyze the effectiveness of completed rehabilitation projects.

The EPA noted during inspection that an I/I study was conducted in 2012 and that the City is focusing rehabilitation efforts to reduce I/I in an effort to mitigate RDII derived SSOs. The EPA also received various planning maps and descriptions indicating that the City is taking proactive steps to address RDII related SSOs.

A **Pump Station Operations and Preventive Maintenance Program**. The Pump Station Operation and Preventive Maintenance Program should include or address the following items/components described below:

i. Pump station operations at pump stations that are to be conducted on a routine, scheduled basis. The program should define the standard pump station operating procedures to be followed at each pump station such as reading and recording information from the elapsed time meters, recording information from the pump start counters, observing wet well conditions and grease accumulation, checking and re-setting, as necessary to improve system performance, wet well set points, checking and recording system pressure, checking SCADA components, checking alarms and stand-by power and identifying maintenance needs.

ii. Emergency pump station operations procedures. The program should address pump station operations at pump stations that are to be conducted as a result of equipment failure or loss of electrical power. The program should define the emergency pump station operating procedures to be followed at each pump station such as calling for emergency maintenance, initiating stand-by power by bringing in portable generators or initiating portable pump operations for pump around.

iii. The program should establish schedules, routes, priorities, standard forms and reporting procedures and establish minimum acceptable performance measures and condition grading criteria.

Preventive maintenance and inspection programs can have a significant positive impact on the future condition of the WCTS. A properly implemented preventive maintenance, inspection and rehabilitation programs can prevent a massive outlay of expenses needed to repair or replace parts of the system that maintenance and management personnel 'did not see' failing due to the lack of prevention. Relatively small preventive maintenance expenses now can save the City larger repair expenses in the future. Formal guidance can also be used to educate City officials, such as the Mayor and City Council responsible for funding decisions and the allocation of resources essential to proper operation and maintenance of the utility.

United Water appears to be applying adequate preventive maintenance on critical systems such as pump stations, air relief valves, force mains, etc. The City would benefit with formally written programs for the various reasons discussed above.

6. Sewer Overflow Response Plan

United Water has developed and implemented an *Incident Reporting SOP for Wastewater Spills and SSO Incidents*. This document includes procedures to respond to SSOs and procedures to report SSOs and bypasses to MDEQ. The document includes 24 hour verbal reporting procedures to MDEQ, as well as to "United Water Incident Reporting Hotline" and provides for incident tracking using commercial software (referred to as the Intelex reporting system). Reporting forms and examples are included for both verbal and written reports to MDEQ. The addition of volume estimating procedures would greatly improve this document.

Equipment available for responding to SSOs includes two VAC trucks, one CCTV truck and a portable camera. None of the lift stations utilize emergency back-up power, nor does the City maintain adequate portable back-up generators for running the lift stations during a major power outage; however, each lift station is equipped with bypass pump connectors and the City retains a local contractor to provide pumps and associated portable power as needed with strict time receipt requirements to respond to emergencies.

E. Wastewater Treatment Plant Reconnaissance Inspection

The EPA and MDEQ performed a Reconnaissance Inspection to ascertain the general condition of the City's wastewater treatment plants. The following summarizes EPA's findings.

1. Laurel POTW No. 1: This WWTP is an oxidation ditch activated sludge type of treatment plant. This plant is permitted under the name "Laurel POTW Number 1," however, the building signage at the facility labels the plant "George Gaddy Wastewater Treatment Facility #1," and the plant is locally referred to as the Massey WWTP.

   The Massey WWTP also has a large receiving pond, similar to a facultative lagoon, that receives sanitary sewage and excess wet weather flow, a decant pond for sludge dewatering and an "anaerobic pond" that handles industrial waste as a preliminary treatment process before transmitting to the oxidation ditch. The plant grounds appeared to be satisfactorily maintained. The influent pump station, oxidation ditches and UV disinfection systems were generally in good condition. Severe damage was noted on the weir of one of the clarifiers. The v-notch weirs appeared to be dysfunctional and at the end of service life (Figure 11).

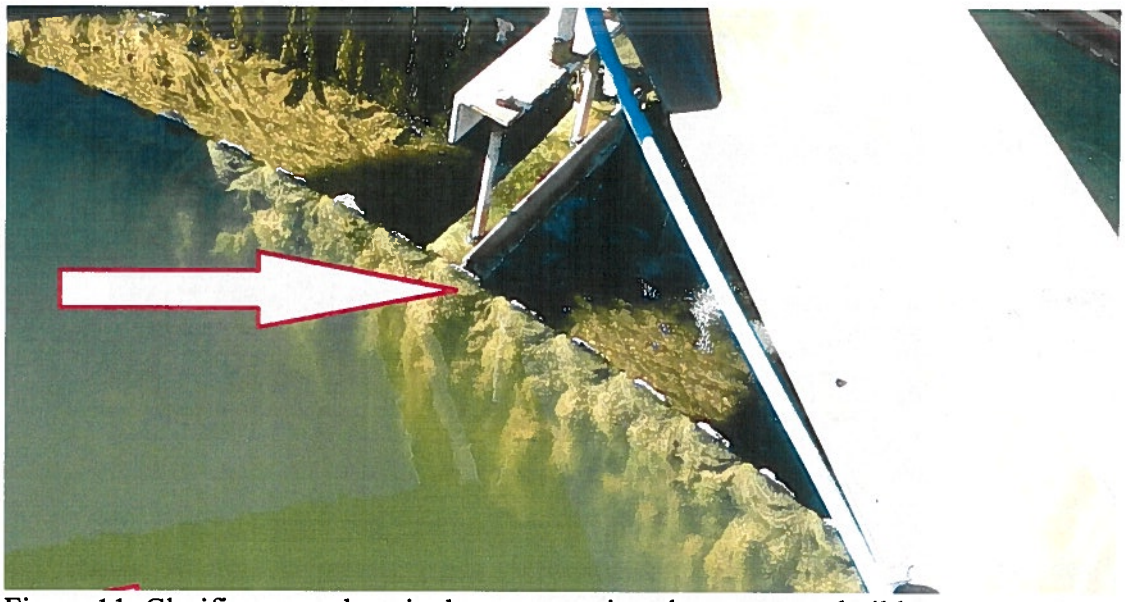

Figure 11. Clarifier v-notch weir shows excessive algae or moss build-up and extreme wear or damage.

An excessive amount of algae or moss was noted growing on the weirs and in other sections of the clarifier. The EPA observed the effluent from the outfall to the receiving waters and noted that the effluent appeared to be clean and clear.

2. Laurel POTW No. 2: This WWTP is an oxidation ditch activated sludge type of treatment plant. This plant is permitted under the name "Laurel POTW Number 2," however, the sign at the facilities office labels the facility the "George Gaddy Wastewater Treatment Facility #2," and the plant is locally referred to as the Smyly WWTP.

   This plant also has a large receiving pond, similar to a facultative lagoon, that receives sanitary sewage and excess wet weather flow, a decant pond for sludge dewatering and an "anaerobic pond" that handles industrial waste from Wayne Farms chicken processing plant as a preliminary treatment process before transmitting to the oxidation ditch. The plant grounds appeared to be satisfactorily maintained. The influent pump station, oxidation ditches and UV disinfection system was generally in good condition. The v-notch weirs appeared to be functional but had excessive algae/moss build-up and showed signs of corrosion.

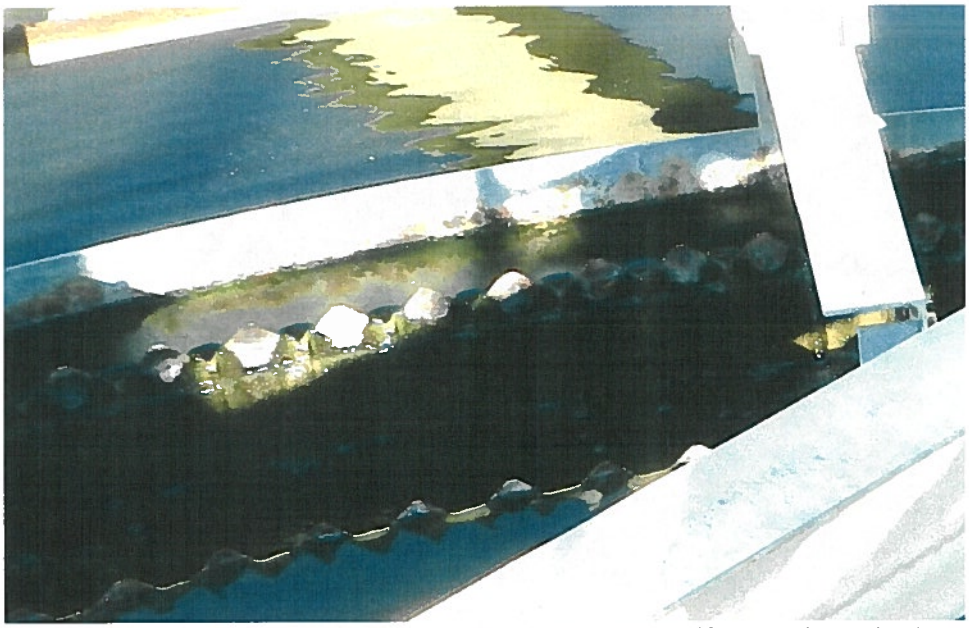

Figure 12. Smyly WWTP clarifier weirs. (Note the difference in weir shape from Figure 11).

The EPA observed the effluent from the outfall to the receiving waters and noted that the effluent appeared to be slightly turbid (light brown) at the contact chambers but no notable color difference at the receiving water.

VI. CONCLUSIONS

The EPA noted that the City is taking the steps to mitigate SSOs and provide needed rehabilitation for the WCTS. However; SSOs located at Herbert Avenue are of considerable concern. United Water management informed the EPA that SSOs at North 5th and North 2nd Avenues may have been eliminated though rehabilitation performed in the sewersheds serving these locations. The City should provide firm evidence that these SSOs have been eliminated and are no longer chronic SSO locations or that the rehabilitation projects currently planned will adequately eliminate these SSOs.

The EPA also noted that some preventive maintenance procedures are being utilized by United Water that are in keeping with best management practices to operate and maintain the system; however, the discrepancies noted at the WWTPs are indicative of a lack of formal preventive maintenance guidance. With the exception of the *Incident Reporting SOP for Wastewater Spills and SSO Incidents,* the City and United Water do not have any formal documents to formalize programs utilized to properly manage, operate and maintain the WCTS. The EPA recommends that United Water and the City develop formal written document for MOM programs as outlined for the WCTS and the WWTPs.

The EPA is very concerned, as noted in Section V.B (SSO Observations), that SSOs are not being reported adequately. The City and United Water should formalize an SSO inspection route for, at minimum, those locations in the WCTS that have experienced more than one SSO at the same location over a period of 12 months, and all known historical RDII-related SSO locations. This inspection route should include SSO locations to be inspected, time and date inspected, and the signature of the person doing the inspection.

Lastly, the v-notch weirs at the Massey WWTP need to be replaced and the clarifiers at both WWTPs should be cleaned regularly to prevent excessive growth of algae/moss. Corrosion noted in the clarifiers should also be examined more closely and adequate steps should be taken to implement corrosion mitigation.